in consultation and, after examining thoroughly, stated that in his opinion there was no meningitis present. The vomiting he explained on the theory that it was cyclic in character and the weakness and lassitude of the child as being due to a lack of proper nourishment.

On the fourteenth day, drowsiness had increased almost to coma. Pulse and heart action were slightly irregular; pupils at times were unequal. Occasionally there was a slight contraction of the cheek muscles hardly to be distinguished from a smile. The knee jerk was slightly increased.

By this time I was fairly well satisfied that the case was tuberculous meningitis and, on the fifteenth day, well-marked twitching of the face and hands was present and the first general convulsion occurred, so that the diagnosis was now quite clear. Dr. F. S. Churchill examined the case with me on that day and several times afterward and his notes have been of assistance in the subsequent history. Our examination at that time showed the child comatose—neck slightly rigid and tender; throat, lungs and abdomen negative; pupils irregular and unequal. Occasional nystagmus and slight strabismus were present. Heart action and pulse were irregular, varying from 72 to 82; temperature 99.5; respiration 12—somewhat irregular and yawning. The patellar reflex was increased; Kernig and Babinski sign absent. A blood count showed: Hemoglobin 50 per cent.; red cells 5,760,000, white cells 8,000.

From that time on, the history was typical; there was increasing weakness and coma and high temperature, and death occurred on the twenty-fourth day. A lumbar puncture was made four times altogether, on the sixteenth, eighteenth, twenty-first and twenty-fourth days and from one-half ounce to two ounces of fluid withdrawn each time. There seemed to be a slight temporary improvement after the first and third punctures and no change after the others. The first specimen of fluid was clear, the others increasingly cloudy. The first was sedimented and the precipitate was small in amount; no tubercle bacilli or other bacteria were found in this specimen. A few cells were present which were largely lymphocytes—thus agreeing with some recent French writers who claim that the cells present in the spinal fluid from this disease are largely lymphocytes as distinguished from other forms of meningitis in which polynuclear leucocytes predominate. A guinea-pig was inoculated with some of the first fluid and died in seven weeks from tuberculosis of the abdominal glands, liver and spleen. Tubercle bacilli were found, however, in the sediment of the fluid obtained from the third puncture.

Autopsy.—A careful autopsy was performed the day after death by Dr. H. G. Wells of the University of Chicago. On opening the abdomen, there were no peritoneal adhesions. The retroperitoneal glands were normal; the mesenteric glands were slightly enlarged, no caseation. Liver, spleen, kidneys and pancreas were all normal. In the gastrointestinal tract, there was no evidence of ulcers in the ileum. Heart and lungs were normal and there were no adhesions nor areas of consolidation on either side. The superficial lymph glands were not enlarged.

Brain and Meninges: There was an unusually large quantity of fluid at the base of the brain. From the optic commissures posteriorly along the medulla, there was a gelatinous yellowish-white material. This was very dense about the infundibulum, forming a solid mass 5 m.m. on each side. There was a dense mass around each anterior cerebral artery which seemed to invade the brain tissue. There was a slight granular exudate over the base of the frontal and temporo-sphenoidal lobes and cerebellum, but none over the upper portion of the brain. The fissures at the base and also the fissures of Sylvius were adherent. Along the arteries, the membranes were beaded and studded with minute white spots. A similar exudate was found between the cerebrum and the cerebellum and about all the fissures at the base. Both lateral ventricles contained a slightly turbid fluid. The membrane of the ventricles was finely granular but not thickened. The choroid plexus appeared normal. The bones at the base of the skull were perfectly normal. The fontanelles were closed and the rest of the skull was normal.

Histologically, the meninges showed all the changes of a typical tuberculous meningitis. The perivascular tuberculosis was very extensive and consisted chiefly of caseous areas. Tubercle bacilli were found in stained sections. All other organs seemed perfectly normal except for some congestion and edema in the posterior parts of the lungs. The mesenteric and peribronchial glands were normal.

In view, therefore, of the fact that the child had no symptoms of tuberculosis elsewhere in the body and that the other organs failed to show tuberculosis either macroscopically or microscopically, I believe we are justified in designating this a case of primary tuberculous meningitis.

369 East Sixty-third street.

GUN-SHOT WOUND OF THE STOMACH.*

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ABERDEEN, S. D.

Although gun-shot wounds of the stomach are among the most serious which a physician or surgeon is called on to treat, modern surgery has done a great deal to place the treatment of these injuries of the stomach and of other abdominal viscera on a more scientific basis and to give more hope for recovery in a large class of these cases.

The tendency to pneumonia after the treatment of these injuries has been suggested by W. J. Mayo and is markedly demonstrated in this case.

History of Shooting.—On Feb. 3, 1905, at 5:30 p. m., a family fracas occurred in which the senior member of a family was used for a target by his stepdaughter, who used a 22-caliber revolver, shooting twice from in front. One shot took effect over the costal cartilages of the ribs about two inches to the left of the median line, taking a course downward, backward and to the right, and passing through all the structures of the abdomen. After striking the cartilage the bullet was deflected a little downward, thence through the stomach and into the muscles of the loin. The shooting occurred immediately after supper and the injured man had a full stomach at the time.

Examination.—When I arrived on the scene the patient was standing in the middle of the floor, bent forward, with his hands over his stomach and complaining of severe pain through the stomach and abdomen. He was nauseated and vomited quite freely, throwing up stomach contents and blood. His face was pinched looking and he had an extreme pallor. A slight examination was made of the wound and its course through the abdomen, and a diagnosis of perforation of the stomach was made, from the characteristic pain, the direction of the bullet and the vomiting of blood, the pallor and the pinched condition of the patient.

Treatment.—The patient was immediately sent to the hospital and after a hasty preparatory treatment he was anesthetized and a laparotomy was performed, the median incision being used.

The incision extended from an inch below the ensiform cartilage to the umbilicus. As soon as the peritoneum was opened, a free flow of blood and stomach contents were encountered. These were mopped out hastily and the injuries to the viscera sought for. An examination revealed a puncture of the anterior wall of the stomach midway between the cardiac and pyloric ends of the stomach and about the same distance between the greater and lesser curvatures.

As the bullet passed through the anterior wall of the stomach, it had severed one of the large arteries, and this had caused copious internal hemorrhage.

The wound in the anterior wall of the stomach was small, but very ragged. It was immediately closed by a double row of sutures, then the stomach was further raised up and retracted to one side and examined for other injuries.

The examination revealed a lacerated and punctured wound of the posterior wall large enough to admit of the tip of the index finger, which was discharging stomach contents freely. This wound was treated in the same manner as the

* Read at a meeting of the Aberdeen District Medical Society, 1905.

anterior wound, after which the other viscera were inspected. No further injury being manifest, the abdomen was subjected to a thorough cleansing with sterile gauze wrung out of sterile salt solution and a free washing with hot sterile salt solution. Lamp-wick drainage was introduced under the bile ducts and under the posterior surface of the stomach and the wound was closed by through and through sutures and the usual sterile dressing applied.

The operation lasted about one hour and fifteen minutes, being prolonged by such operative difficulties as tympany of the intestines and poor light.

In the search for injury to other viscera we were unable to trace the bullet after it left the stomach. After the operation was concluded, the patient was put to bed in fairly good condition.

Subsequent History.—Nothing eventful occurred until the second day, when the pulse became rapid, though the temperature was practically normal; a marked jaundice was manifest. At the end of the first twenty-four hours after the operation the first dressing was made. At this time the entire dressing was saturated with secretions carried out by our lamp-wick drainage. At the end of the second twenty-four hours, the second dressing was made and the lamp-wick drainage removed. This dressing was also fairly well saturated with secretions. On the third day the jaundice was more marked. On the fourth day, the jaundice began to fade and had about all disappeared at the end of the first week. During the first week, the patient was fed by nutritive enemata and the saline solution was continued through the first ten days, nothing being administered by the mouth, except occasional teaspoonsful of iced water. During the first ten days, the temperature ranged from 97 to 101 F. This temperature was largely accounted for by the infection of the abdominal stitches. These stitches were placed under more than ordinary tension, as the patient was very much bloated at the time of the operation and the abdominal cavity was further distended to its full capacity by saline solution.

After the tenth day the patient was fed with milk and lime water and predigested foods, plenty of liquids being administered at regular intervals. This form of nutrition was continued up to the fourteenth day, after which time he was allowed a liberal diet of light foods, both solid and liquid, and all the fluids that he desired.

During the second week the patient developed a marked dyspnea which was manifest by shortness of breath, a moderate cough and a pain in the right side on breathing and coughing. There was no spitting of blood or rusty sputum, but examination revealed consolidation of the lower lobe of the right lung and of the posterior surface of the middle lobe extending as high as the superior border of the scapula.

These conditions remained practically unchanged up to the twenty-first day, except that there was an increased temperature and pulse rate until the night of the twenty-first day, when he had a profuse sweat and the temperature fell to normal. Pain left and breathing became quite natural, this evidently being the crisis, which came suddenly and was very marked.

After this the lung conditions remained very obstinate as far as clearing and restitution of function were concerned, it being a very marked and stubborn case of delayed resolution. By the fifth week, however, the lungs were fairly clear and the patient steadily improving. This progress continued up to the forty-eighth day, at which time he was able to take short walks and to take care of himself very nicely, and was discharged from the hospital on this day.

Remarks.—I believe that drainage was of inestimable service in this case. The patient had comparatively thin abdominal wall and a moderately fat omentum, and this, together with the median incision, very much lessened the operative difficulties of seeing and treating the double rent in the stomach and gave ample room for inspecting other viscera and cleaning the wound.

The treatment of gun-shot wounds of the stomach as practiced by military surgeons in the field, which is shown to be uniformly unsuccessful, has led many physicians to believe that laparotomy is not indicated in these injuries, and prob-

ably some lives have been sacrificed by not treating them promptly by operation. This, however, should not be undertaken unless surroundings are favorable for clean and aseptic work.

I am indebted to Drs. Frank Miller and C. E. McCauley for valuable assistance and suggestions in the treatment and after-care of the patient. I am also indebted to the Sisters of St. Luke's Hospital for special care and preparation of the patient.

CHRONIC PURPURA HEMORRHAGICA.

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SYRACUSE, N. Y.

The editorial statement in THE JOURNAL, June 10, that chronic forms of purpura hemorrhagica are so seldom mentioned in medical literature that we are apt to regard them as being exceedingly rare, leads me to report a case that came under my observation during the years 1896 to 1903, inclusive.

Patient.—C. D., male, was born May or June, 1895, date not certain. His parents were of German birth, and both of them exceptionally large people, each weighing over 200 pounds, but well proportioned and in vigorous health. This child was one of twelve, five of whom died in infancy, or in very early years, the others being in excellent health.

History.—I first saw him with the physician who had attended him from birth, in December, 1895, and the beginning of the following year he came under my care and remained so till October, 1903. He was a large, well-formed, fat baby of 6 or 7 months. He was somewhat anemic, but there was no discoloration, sponginess or hemorrhage of the gums, no swelling of the thighs, or any of the classical signs of scorbutus. The mother was nursing him. She had plenty of milk, of a good quality. He was nursed until 18 months of age, the last six or seven months potatoes and other foods also being used. As the child developed he ate bread and butter, meat, potatoes and other vegetables, fruit, etc., the same as the rest of the family, and as they kept a cow he had plenty of good cow's milk. I do not know when the purpura began, but it must have been in the very early months, for I was told that he had received nearly every known treatment, but to no purpose thus far. From that time I had frequent opportunity to witness the appearance, course and disappearance of the purpuric areas. From the first date given until some four years later the child was scarcely ever without the spots somewhere on his body, varying in size from that of a dime to that of a small orange. One of the latter I saw on his forehead once, and, if I had not known the cause I should have thought that he had received a severe blow with consequent ecchymosis, the disappearance of the spot being the same as that from a blow—gradually turning from red to dark blue, and then greenish yellow, etc., until it faded away entirely. After his fifth year the spots appeared at gradually lengthening intervals, and the rheumatic phase of the case became more prominent. The child had severe inflammatory reaction about the joints, especially the knee and shoulder. Salicylates were administered faithfully, but apparently with no effect. He had previously had Fowler's solution, syrup of hypophosphites comp., and other tonics.

The knee became partly flexed, and in spite of all that I could do to get him to use the leg and knee or his parents to manipulate them during the intervals, he continued to go about with a partly flexed knee and used a crutch or stick to assist him in walking. His blood was thin, lacking in color, not easily coagulated, and he bled excessively from the slightest wound, though I was generally able to check hemorrhage by the use of Monsel's solution and tightly applied bandage.

The case may be considered by some as one of scurvy, but from the fact that there was no emaciation, no spongy or bleeding gums, no swelling or deformity of the thigh, leg or other bones (at least for the first five years), and also because there was no apparent reason for such trouble in the food, either as regards quality or quantity, I have not been able so to classify it. My removal from the locality has taken from my observation what was to me a very interesting case.